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(56) Documents Cited

GB 2301763 A

GB 2210250 A

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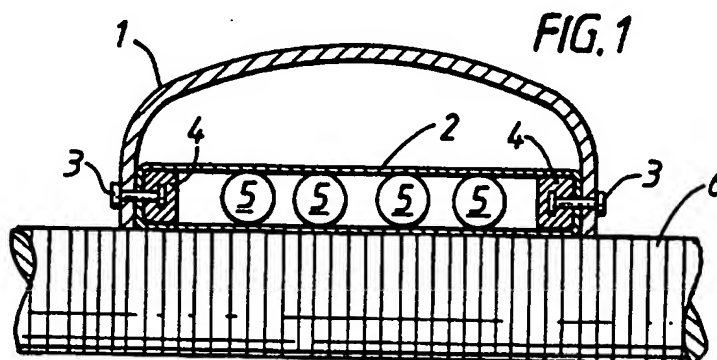
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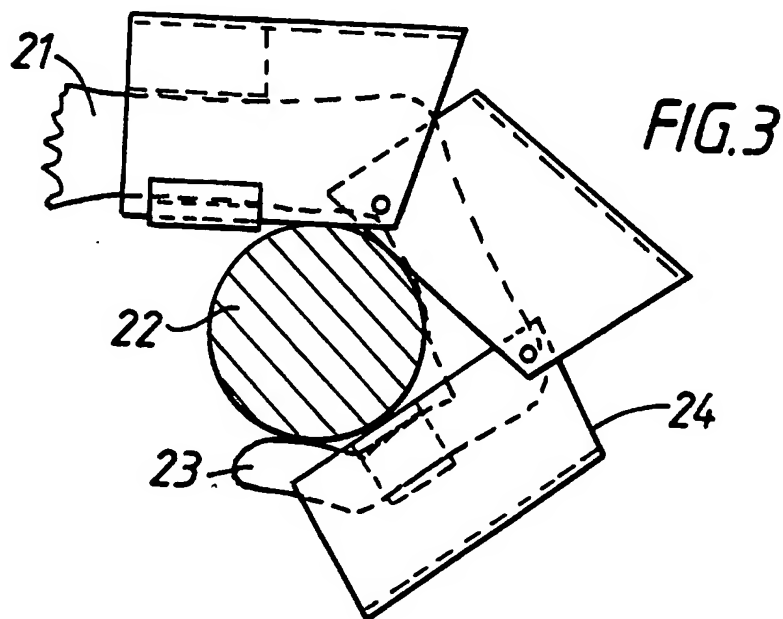
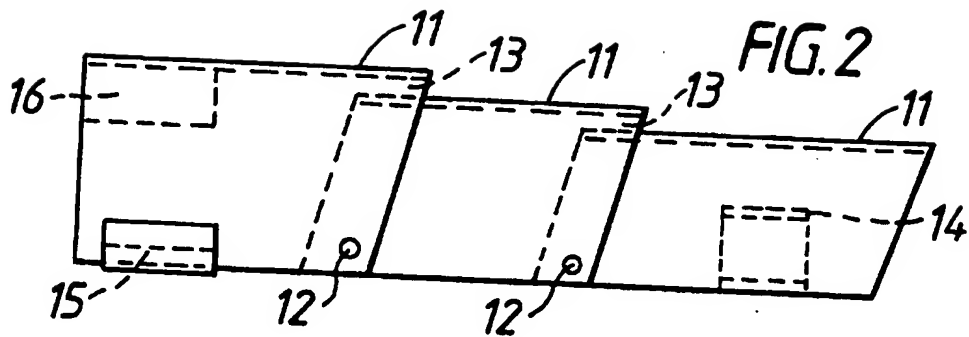
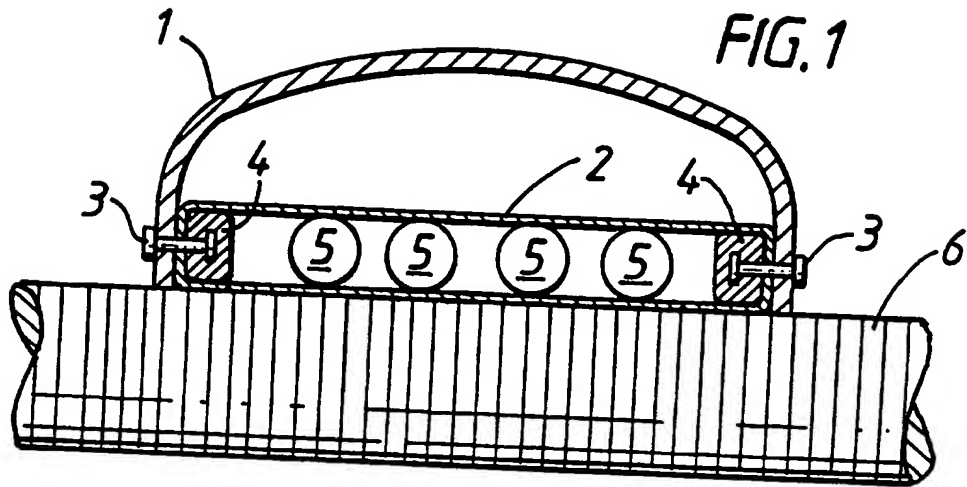
(54) Hand protector

(57) A hand protector or glove for use in playing a ball game comprising a shell structure 1 for shielding the back of a wearer's hand by transmitting a proportion of the impact force, when struck, to a bat or other like implement 6 held in that hand of the wearer. The protector is attached to the wearer's hand to form a batting glove. Two or more shell structures may be joined together to form flexible joints, thereby enabling the hand protector to adopt fully flexible characteristics, such as a gripping action.

The invention also describes an article to cover a hand used whilst playing a game, for example cricket, having an outer part which substantially acts as a barrier to moving objects for the hand and/or fingers and/or thumb of the wearer, a plurality of side parts connected to the outer part and retaining means to removably retain the article on the wearer's hand, said outer part upon contact with a moving object, substantially deflecting a proportion of the force of the moving object and side parts transmitting said force to a bat or similar object being held.



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HAND PROTECTOR

This invention relates to a glove for ball games such as cricket.

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Known gloves protect the wearer's fingers from the effects of an impacting ball, principally, by means of padding contained within the glove. The relevant sections of the appropriate British Standard (BS 6183:Part 1:1981 attached) apply specifically to gloves constructed in this manner.

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It is known that such a construction can be ineffective in preventing injuries such as broken fingers. There are also disadvantages in that the padding restricts finger movement and inhibits ventilation of the hands, causing excess perspiration.

15 Some known gloves incorporate hard plastics/parts to provide additional protection to individual fingers, but these can further compromise movement and ventilation. Further, they do not prevent the force of ball impact being transmitted through to the hand, therefore there is a possibility of injury.

20 The invention seeks to avoid or reduce the problems of the prior art by using a semi-rigid structure to transmit much of the force of impact directly on to the bat handle around the fingers. The rigidity of the structure will also serve to distribute the remaining impact forces over a wider area of the hand, thus considerably reducing the possibility of injury.

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One aspect of the present invention comprises a hand protector for use in playing a ball game which protector comprises a shell structure for shielding the back of the hand and/or backs of the fingers and thumb of a wearer, and means provided on the shell structure by which the protector can be retained on the wearer's hand, the shell structure being adapted to transmit at least a proportion of impact force, when struck,
30 to a bat or other like implement held in that hand of the wearer.

In another form, the present invention provides an article to cover a hand used in playing a game, for example cricket, having an outer part which substantially acts as a barrier to moving objects for the hand and/or fingers and/or thumb of the wearer, a plurality of side parts connected to the outer part and retaining means to removably
5 retain the article on the wearer's hand, said outer part upon contact with a moving object, substantially deflecting a proportion of the force of the moving object and said side parts transmitting said force to a bat or similar object being held in the hand.

According to one optional feature of the invention there are a plurality of said outer
10 parts in generally adjacent positions.

A further optional feature provides that the outer parts are connected one to next and that each outer part can be moved relative to an adjacent connected outer part to enable a hand to grip an object.

15

In another optional feature said adjacent outer parts overlap and are hinged together, said outer parts being so shaped as to enable adjacent outer parts to pivot freely with respect to each other as a wearer's hand is moved between an open position and a position where it is closed about the handle of a bat or other playing implement. The
20 articles may comprise a proximal outer part (to protect a major area of the hand) and one or more distal parts, each distal part being capable of nesting at its proximal end under the distal end of the adjoining outer part proximal thereto.

In yet another optional feature the retaining means comprises a transverse fabric strap.

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In an alternative optional feature the retaining means comprises a glove.

In another optional feature the retaining means is attached to said outer and/or said side parts by fastening means, for example, a barb fastener as sold under the registered
30 trade mark Velcro[®], which enables said retaining means to be removed.

In another optional feature the retaining means is attached to said outer and/or said side part(s) by fixing means to prevent said retaining means from being removed.

In a further optional feature the outer part is substantially semi-circular in shape.

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In yet a further optional feature the outer and side part(s) are integral.

In a further optional feature padding is applied to areas of the article, especially those areas of the article which come into contact with the wearer's hand.

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In another optional feature the outer and/or side part(s) are constructed from fibre-reinforced plastics or metal.

In yet another optional feature a plurality of side parts are positioned to encompass a number of the wearer's fingers.

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In yet a further optional feature the side parts include strengthening members which aid the transmission of impact forces from the moving object.

The invention includes a glove or strap for retaining an article or protector of the invention on a hand.

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The invention will now be described, by way of example only, with reference to the accompanying drawings, in which:

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FIGURE 1 shows a sectional element of an embodiment of a single shell;

FIGURE 2 shows a side elevation of an embodiment of a multiple shell structure; and

FIGURE 3 shows a side elevation of an embodiment of a multiple shell structure in use.

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handle or the like or releases the handle. The batsman's fingers are held within a loop of fabric 14 and the palm is held between a fabric strap 15 and padding 16. The shell structure may fasten on to the back of an inner glove either directly or through the padding 16, by means of a fastener which works by entrapment of a plurality of minute
 5 barbs on one of the two articles to be fastened together in a fibrous mat on the other thereof; such barb fasteners are commercially available under the registered trade mark Velcro®. Alternatively, other fastening means could be used. The inner glove is used to improve comfort and to fasten the structure to the batsman's hand.

10 The multiple shell structure of Figure 2 is shown in use in Figure 3 where the batsman's hand 21 is gripping a bat handle 22. The tips of the batsman's fingers 23 may protrude from the open end of the distal shell 24 but still be protected from ball impact.

15 In modifications of the invention, individual fingers or pairs of fingers are provided with their own shell or shells.

Optionally, the distal shell 24 is closed at its free end to retain the tips of the batsman's fingers and/or glove within the shell and to provide further protection.

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The invention includes a hand protector comprising one or a plurality of shells capable of transmitting force received from a ball to the handle of a bat or other playing implement held in the hand. Where there are a plurality of shells, e.g. three or more, adjacent shells in the longitudinal direction of the hand are relatively moveable to
 25 permit opening and closing the hand in grasping or releasing said handle. Preferably, the protector comprises a proximal shell to protect the main body of the hand and two distal shells to protect the fingers, the proximal end of each distal shell being capable of being nested within the distal end of its proximally adjoining shell when the hand is in open position.

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Also included in the invention is a glove or fabric strap for releasable attachment to a hand protector of the invention. Some gloves of the invention cover only a portion of the hand.

CLAIMS

1. A hand protector for use in playing a ball game which protector comprises a shell structure for shielding the back of the hand and/or backs of the fingers and thumb
5 of a wearer, means provided on the shell structure by which the protector can be retained on the wearer's hand, the shell structure being adapted to transmit at least a proportion of impact force, when struck, to a bat or other like implement held in that hand of the wearer.
- 10 2. An article to cover a hand used whilst playing a game, for example cricket, having an outer part which substantially acts as a barrier to moving objects for the hand and/or fingers and/or thumb of the wearer, a plurality of side parts connected to the outer part and retaining means to removably retain the article on the wearer's hand, said outer part upon contact with a moving object, substantially deflecting a
15 proportion of the force of the moving object and side parts transmitting said force to a bat or similar object being held.
3. An article according to claim 1 or claim 2 wherein said outer part is substantially semi-circular in shape.
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4. An article of claims 1 to 3 wherein there are a plurality of said outer parts in generally adjacent positions.
5. An article according to claim 4 wherein said outer parts are connected one to
25 next and each outer part can be moved relative to an adjacent connected outer part to enable a hand to grip an object.
6. An article according to claim 5 wherein said adjacent outer parts overlap and are hinged together, and are so shaped as to enable adjacent outer parts to pivot freely
30 with respect to each other as a wearer's hand is moved between an open position and a position where it is closed about the handle of a bat or other playing implement.

7. An article according to any of the preceding claims wherein said outer and side part(s) are integral.
8. An article according to any of claims 2 to 7, wherein said retaining means
5 comprises a transverse fabric strap.
9. An article according to any of claims 2 to 7 wherein said retaining means comprises a glove.
10. 10. An article according to claim 8 or claim 9 wherein said retaining means is attached to said outer and/or said side part(s) by means which enables said retaining means to be removed.
11. An article according to claim 8 or claim 9 wherein said retaining means is
15 attached to said outer and/or said side part(s) by fixing means to prevent said retaining means from being removed.
12. An article according to any of the preceding claims which further comprises padding.
20
13. An article according to claim 12 which comprises padding applied to those areas of the article which come into contact with the wearer's hand.
14. An article according to any of the preceding claims wherein said outer and/or
25 said side part(s) are constructed from fibre-reinforced plastics or metal.
15. An article according to any of the preceding claims wherein a plurality of side parts are positioned to encompass a number of the wearer's fingers.
- 30 16. An article according to claim 15 wherein said side parts comprise strengthening members which aid the transmission of impact forces from the moving object.

17. A hand protector comprising two or more shells interconnected end to end and capable of transmitting force received from a ball to the handle of a bat or other playing implement held in the hand, adjacent shells being relatively movable to permit opening and closing of the hand in grasping and releasing said handle.

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18. A glove adapted to be releasably fastened to the shell structure of a hand protector of claim 1, the outer and/or side parts of an article of any of claims 2 to 16, or to a hand protector of claim 17.

10 19. A glove according to claim 18 which is provided on its back with fastening means comprising one of the parts of fastening material of the type comprising a fist carrying a plurality of minute barbs and a second part comprising a fibrous mat for engaging the barbs.

15 20. A glove provided on the back of its main body and/or on the back of one or more of its finger parts with one of the parts of barb type fastening material as referred to in claim 19.

21. An article to cover a hand substantially as hereinbefore described.

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22. An article to cover a hand substantially as hereinbefore described with reference to the accompanying drawings.

23. The use of a hand protector of claim 1 or an article according to any of claims
25 2 to 16 to substantially protect the wearer's hand from a moving object.

24. A product comprising (i) a shell structure of a hand protector of claim 1, an integral member comprising the outer and side parts of an article of any of claims 2 to 16 or a hand protector of claim 17 and (ii) a glove or strap for use in retaining the
30 protector or article on a hand.

25. A product of claim 24 wherein the glove is as defined in claim 18 or claim 19.



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Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK CI (Ed.O): A3V (V1A5X, V1A1C2)

Int CI (Ed.6): A41D 13/10, A63B 71/14

Other: Online: WPI

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X,E	GB 2301763 A (Barton & Cullis)	1
X	GB 2210250 A (Dellor)	1

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.